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## HEMLOCK AND PARSLEY.

BY W. W. BAILEY.

THE study of the order Umbelliferæ presents peculiar difficulties to the beginner, for the flowers are uniformly small, and strikingly similar throughout the large and very natural group. The family distinctions or features are quite pronounced and unmistakable, and it is the determination of the genera which presents obstacles,—serious, indeed, but not insurmountable “By their fruits shall ye know them.”

The Umbelliferæ, as we see them here, are herbaceous, with hollow, often striated stems, usually more or less divided leaves, and no stipules. Occasionally we meet a genus, like *Eryngium* or *Hydrocotyle*, with leaves merely toothed or lobed. The petioles are expanded into sheaths; hence the leaves wither on the stem. The flowers are usually arranged in simple or compound umbels, and the main and subordinate clusters may or may not be provided with involucre and involucel. To this mode of arrangement there are exceptions. In marsh-penny-wort (*Hydrocotyle*) the umbels are in the axils of the leaves, and scarcely noticeable; in *Eryngium* and *Sanicula* they are in heads. The calyx is coherent with the two-celled ovary, and the border is either obsolete or much reduced. There are five petals inserted on the ovary, and external to a fleshy disk. Each petal has its tip inflexed, giving it an obcordate appearance. The common colors of the corolla are white, yellow, or some shade of blue. Alternating with the petals, and inserted with them, are the five stamens.

The fruit, upon which so much stress is laid in the study of the family, is compound, of two similar parts or carpels, each of which contains a seed. In ripening, the parts separate, and hang divergent from a hair-like prolongation of the receptacle known as the gynophore. Each half fruit (mericarp) is tipped by a persistent style, and marked by vertical ribs, between or under which lie, in many genera, the oil-tubes or vittæ. These are channels

containing aromatic and volatile oil. In examination the botanist makes delicate cross-sections of these fruits under a dissecting microscope, and by the shape of the fruit and seed within, and by the number and position of the ribs and oil-tubes, is able to locate the genus. It of course requires skill and experience to do this, but any commonly intelligent class can learn the process. It goes without saying, and as a corollary to what has already been stated, that these plants should always be collected in full fruit; the flowers are comparatively unimportant. Any botanist would be justified in declining to name one of the family not in fruit. An attempt would often be mere guesswork.

In this family is found the poison hemlock (*Conium*) used by the ancient Greeks for the elimination of politicians. It is a powerful poison. The whole plant has a curious mousy odor. It is of European origin. Our water hemlock is equally poisonous, and much more common. It is the *Cicuta maculata* of the swamps,—a tall, coarse plant which has given rise to many sad accidents. *Æthusa cynapium*, another poisonous plant, known as “fool’s parsley,” is not uncommon, and certainly looks much like parsley. This only goes to show how difficult it is for any but the trained botanist to detect differences in this group of plants. Side by side may be growing two specimens, to the ordinary eye precisely alike, yet the one will be innocent and the other poisonous.

The drug assafœtida is a product of this order. All the plants appear to “form three different principles: the first, a watery acid matter; the second, a gum-resinous, milky substance; and the third, an aromatic, oily secretion. When the first of these predominates they are poisonous; the second in excess converts them into stimulants; the absence of the two renders them useful as esculents; the third causes them to be pleasant condiments.” So that besides the noxious plants there is a long range of useful vegetables, as parsnips, parsley, carrots, fennel, dill, anise, caraway, cummin, coriander, and celery. The last, in its wild state, is said to be pernicious, but etiolation changes the products and renders them harmless. The flowers of all are too minute to be individually pretty, but every one knows how charming are the

umbels of our wild carrot, resembling as they do the choicest old lace. Frequently the carrot has one central maroon-colored floret.

Though most of the plants are herbs, Dr. Welwitsch found in Africa a tree-like one, with a stem one to two feet thick, much prized by the natives for its medicinal properties, and also valuable for its timber. In Kamschatka also they assume a sub-arboreous type, as well as on the steppes of Afghanistan.

As mistakes often occur by confounding the roots of Umbelliferæ with those of horse-radish or other esculents, it is well, when in doubt, to send the plants, *always in fruit*, if possible, for identification. None of them are poisonous to the touch,—at least to ordinary people. Cases of rather doubtful authenticity are reported from time to time of injury from the handling of wild carrot. We have always suspected the proximity of poison ivy; still, it is unwise to dogmatize on such matters. Some people cannot eat strawberries—more's the pity!—while the rest of us get along with them very happily. Lately the *Primula obconica* has acquired an evil reputation as an irritant, so there is no telling what may not happen with certain constitutions.

Difficult as is the study of Umbelliferæ, it becomes fascinating on acquaintance. To hunt up a plant and name it by so scientific a process brings to the student a sufficient reward.

*Providence, Rhode Island, July 2d, 1891.*